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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/361,610 | 07/27/1999 | AKIO KOBAYASHI | 990864 | 5723 |

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EXAMINER

VILLECCO, JOHN M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2612

DATE MAILED: 04/11/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/361,610

Applicant(s)

KOBAYASHI ET AL.

Examiner

John M. Villecco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 7-8 and 16-17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2. The disclosure is objected to because of the following informalities:

- On page 16, line 19, applicant recites the reference numbers “12j – 22s”. It appears that this is a typographical error and that applicant meant to use the reference numbers -- 22j – 22s --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 4-5, 7-8, 12-13, and 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

5. Regarding *claim 4*, applicant recites the phrase “..moving distance greater than a distance that said first light receiving elements vertically continue.” This phrasing is unclear. More specifically, the words “vertically continue” are not common terminology in the art, nor is it easy for one of ordinary skill in the art to fully understand. For examination purposes it will be

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assumed that the applicant means that the charge moves further than the pixel group consisting of an R pixel, G pixel, R pixel, and G pixel, during one transfer period.

6. As for **claim 5**, applicant states that the charge moves "...over at least a distance corresponding to said first light receiving elements of N in number." This phraseology is also unclear. What is meant by a distance corresponding to the light receiving elements of N in number? This could mean it moves a distance of one light receiving element or it could mean that it moves a distance corresponding to all of the light receiving elements. For examination purposes it will be assumed that applicant means that charge moves a distance corresponding to the distance of all of the N light receiving elements combined.

7. As for **claim 7**, applicant recites the limitation of a "second processor". It appears that the processing is being performed by the only one processor – the 2 screen compositor (32). Therefore, applicant is claiming a second processor when only one exists.

8. **Claim 12** is considered substantively equivalent to claim 4. Please see the discussion of claim 4 above.

9. **Claim 13** is considered substantively equivalent to claim 5. Please see the discussion of claim 5 above.

10. As for **claim 16**, applicant recites the limitation of a "second image signal creating means". It appears that the creating is being performed by the only one creator – the 2 screen compositor (32). Therefore, applicant is claiming a second image creating means when only one exist.

11. **Claims 8 and 17** are rejected based upon their dependency upon claims 7 and 16, respectively.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. **Claims 1-5 and 9-14 are rejected under 35 U.S.C. 102(e) as being anticipated by**

Fukui (U.S. Patent No. 5,917,546).

14. Regarding *claim 1*, Fukui discloses a CCD imager (1) having pixels (2), which inherently consist of a predetermined number, arranged in vertical and horizontal directions. As shown in Figure 3, Fukui discloses vertical transfer registers (3) for each of the columns and three portions of the transfer registers associated with each of the pixels. The three portions of the transfer registers constitute one transfer region. Fukui also discloses horizontal transfer registers (4 and 5). As shown in Figure 2, Fukui discloses a timing generator (15) which supplies signals to the CCD imaging element to read charge out. The imager of Fukui outputs two exposures. The first exposure (T2) has a normal length and the second exposure (T1) is of a shorter length. Figure 4 shows the particulars of the imager readout. The charge is read from the pixel to the vertical transfer register and then moved through the vacant registers for readout. Additionally, a horizontal transfer signal is inherently used to transfer the charge out of the horizontal transfer register. Furthermore, Fukui discloses synthesizing the signals to form a high dynamic range

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image using the synthesis processor (7) and the signal processor (11) which have been output from the horizontal transfer register.

15. As for *claim 2*, once the image signals are shifted by the field buffer memory (9), the image signals for two successive readouts of the same pixel are combined to form an increased dynamic range image signal.

16. With regard to *claim 3*, it is implied that the charge moving signal moves the first charge simultaneously with or prior to reading out the second charge since charge would be combined if two successive readouts were implemented without first moving the prior charge. Since the combining of charge is done in the synthesis circuit (7), charge cannot be combined in the vertical transfer registers.

17. Regarding *claim 4*, the charge that is first collect is read out to the vertical transfer register. In order for the charge to be read out, the moving distance of the charge would have to be greater then the length of the combination of the four pixel elements.

18. As for *claim 5*, the imager of Fukui contains N light receiving elements. In order for the charge from the first pixel to be read out, it would have to be read out a distance (d), where (d) is the distance of each of the pixels combined. The distance (d) is an arbitrary value made by the examiner. Since the charge is read down the vertical transfer register to the horizontal transfer register, the charge from the first pixel would be read through the distance (d) to get to the horizontal transfer register.

19. *Claim 9* is considered substantively equivalent to claim 1. Please see the discussion of claim 1 above.

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20. **Claim 10** is considered substantively equivalent to claim 2. Please see the discussion of claim 2 above.

21. **Claim 11** is considered substantively equivalent to claim 3. Please see the discussion of claim 3 above.

22. **Claim 12** is considered substantively equivalent to claim 4. Please see the discussion of claim 4 above.

23. **Claim 13** is considered substantively equivalent to claim 5. Please see the discussion of claim 5 above.

24. As for **claim 14**, Fukui discloses the use of an electronic shutter, controlled by a shutter control circuit (10) which controls charge storage duration. See column 4, lines 6-8.

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. **Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui (U.S. Patent No. 5,917,546).**

27. Regarding **claim 6**, as mentioned above in the discussion of claim 1, Fukui discloses all of the limitations of the parent claim. However, Fukui fails to specifically disclose a monitor connected to the processor for displaying the image. Official Notice is taken as to the fact that using a monitor to display a processed image is well known in the art. By providing a monitor

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attached to the signal processor the user is able to quickly and easily review the image which was just captured. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect a monitor to the image signal processor so that a user can quickly see the image which was just captured.

28. **Claim 15** is considered substantively equivalent to claim 6. Please see the discussion of claim 6 above.

Allowable Subject Matter

29. **Claims 7-8 and 16-17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

30. The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claims 7 and 16**, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest a shutter button used to initiate a third and fourth exposure where the third and fourth charge are read out all read out at the same time instead of intermittently and also combined to form a combined image.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-6306 (For either formal or informal communications intended for entry. For informal or draft communications, please label **"PROPOSED"** or **"DRAFT"**)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington VA, Sixth Floor (Receptionist).


Any inquiry concerning this communication or earlier communications from the
examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460.
The examiner can normally be reached on Monday through Thursday from 7:00 am to 5:30 pm
EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the
organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the customer service desk whose telephone number is (703) 306-0377.



JMV
3/27/03



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